

Translation

PATENT COOPERATION TREATY

PCT/CH2003/000710



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference PR0215.0 PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/CH2003/000710	International filing date (<i>day/month/year</i>) 30 October 2003 (30.10.2003)	Priority date (<i>day/month/year</i>) 19 December 2002 (19.12.2002)
International Patent Classification (IPC) or national classification and IPC H01J 37/32, C23C 14/32		
Applicant UNAXIS BALZERS AKTIENGESELLSCHAFT		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.	
2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.	
<input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).	
These annexes consist of a total of <u>3</u> sheets.	
3. This report contains indications relating to the following items:	
I <input checked="" type="checkbox"/>	Basis of the report
II <input type="checkbox"/>	Priority
III <input type="checkbox"/>	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
IV <input type="checkbox"/>	Lack of unity of invention
V <input checked="" type="checkbox"/>	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
VI <input type="checkbox"/>	Certain documents cited
VII <input type="checkbox"/>	Certain defects in the international application
VIII <input type="checkbox"/>	Certain observations on the international application

Date of submission of the demand 29 April 2004 (29.04.2004)	Date of completion of this report 01 April 2005 (01.04.2005)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

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International application No.

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I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
 pages 1-21, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☒ the claims:
 pages 5-16, 26-32, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages 1-4, 17-25, filed with the letter of 23 February 2005 (23.02.2005)
- ☒ the drawings:
 pages 1/16-16/16, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

- These elements were available or furnished to this Authority in the following language _____ which is:
- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-32	YES
	Claims		NO
Inventive step (IS)	Claims	1-32	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-32	YES
	Claims		NO

2. Citations and explanations

The invention relates to a vacuum arc source that differs from the two documents cited in the search report in that, owing to two oppositely poled magnet systems, the magnetic field components that are perpendicular with respect to the surface are reduced to a constant value that is as small as possible.

Therefore, the problem of inhomogeneous erosion of the target is solved in a simpler manner than in the cited prior art.

The prior art contains nothing that suggests this solution.

The subject matter of claim 1 and of the dependent claims is novel and inventive (PCT Article 33(2) and (3)), subject to rectification of the lack of clarity described below.

The same applies, *mutatis mutandis*, to the method claim 21 and the claims dependent thereon.

Observation:

The prior art describes that the spark vaporizes the

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target on a path that follows the zero point of the perpendicular field component. In light thereof, the wording "essentially constantly small values" in claim 1 does not appear to be clear enough (PCT Article 6) in order to define an inventive difference with respect to the prior art. The reason therefor is the use of "essentially constantly", since a deviation from constancy clearly leads to preferred spark paths, which results in inhomogeneous erosion, thereby no longer solving the problem to be solved by the invention.

In claim 21, the wording "essentially constantly close to or at zero" leads to a lack of clarity since "close to zero" is a relative term that is not suitable for defining the limits of the scope of protection. In addition, a person skilled in the art wonders whether by using "close to zero", something other than "constantly less than 30 Gauss" in claim 1 should be placed under the scope of protection.